

EXTANT CLAIMS

Following are clean copies of the extant claims, including any further amendment requested herewith:

1-16: (cancelled)

17. **(new)** A method for optimizing drilling performance of a roller cone drill bit, comprising:

simulating drilling with the bit in a selected earth formation to determine at least one drilling performance parameter;

adjusting, an orientation of at least one non-axisymmetric cutting element on the bit;

repeating the simulating the drilling and determining the at least one performance parameter; and

repeating the adjusting and simulating the drilling until the at least one performance parameter is determined to be at an optimum value.

18. **(new)** A roller cone drill bit, comprising:

a plurality of roller cones, each rotatably mounted on a bit body;

a plurality of cutting elements on each of the cones, at least one of the cutting elements being non-axisymmetric; and

wherein an angle subtended between a long dimension of the at least one non-axisymmetric cutting element and an axis of rotation of the cone on which the at least one cutting element is disposed is selected to optimize a value of at least one drilling performance parameter.

19. **(new)** The roller cone drill bit as defined in claim 18 wherein the cutting elements comprise milled steel teeth.

20. **(new)** The roller cone drill bit as defined in claim 18 wherein the cutting elements comprise tungsten carbide inserts.
21. **(new)** The roller cone drill bit as defined in claim 18 wherein at least one cutting element in a row having cutting elements oriented at the subtended angle is disposed at a different angle whereby the drill bit substantially avoids tracking.